supplying a high velocity jet flow of gaseous fuel to the high temperature zone of the HVOF device;

supplying a high velocity jet flow of oxygen to the high temperature zone of the HVOF device and combusting the oxygen and fuel to generate sufficient heat in the high temperature zone to melt the tip end of the feed wire in the high temperature zone and spraying the molten feed wire material onto the cylinder wall surface of the engine block to form a ferrous-based coating thereon; and

controlling the flow of the oxygen relative to the flow of the gaseous fuel to provide an oversupply of oxygen in excess of the oxygen required for stoichiometric combustion of the gaseous fuel, and reacting the excess oxygen with an associated fraction of the wire feed material in the high temperature zone to combust the associated fraction of the wire feed material as a source of solid fuel to provide a supplemental source of heat to the high temperature zone of the HVOF device; and wherein the ferrous-based coating includes an addition of at least one [additive material selected from the group consisting] of: yttrium, calcium, magnesium, titanium, zirconium, hafnium, cerium, and lanthanum; and wherein the amount of oversupply of oxygen is sufficient to increase the deposition rate of the molten metal on the cylinder wall by more than two-fold than that deposited when oxygen is suppled at that required for stoichiometric combustion of the gaseous fuel.

2. (Amended) The method of claim 1 wherein the oxygen is oversupplied in an amount [about] of at least twice that needed for stoichiometric combustion with the fuel.

Add claims 10-14 as follows:

10. The method of claim 1 wherein the metal engine block comprises at least one of aluminum, magnesium and alloys thereof.

11. The method of claim 5 wherein the metal engine block comprises at least one of aluminum, magnesium and alloys thereof.

12. The method of claim 1 wherein the gaseous fuel comprises at least one of methane and propane.

13. The method of claim 5 wherein the gaseous fuel comprises at least one of methane and propane.

14. A method of thermally spray coating a cylinder wall of a metal engine block, said method comprising:

providing a high velocity oxygen fuel (HVOF) device;

advancing a feed wire of ferrous-based material into the HVOF device to locate a tip end of the wire in a high temperature zone of the HVOF device;

supplying a high velocity jet flow of gaseous fuel to the high temperature zone of the HVOF device;

supplying a high velocity jet flow of oxygen to the high temperature zone of the HVOF device and combusting the oxygen and fuel to generate sufficient heat in the high temperature zone to melt the tip end of the feed wire in the high temperature zone and spraying the molten feed wire material onto the cylinder wall surface of the engine block to form a ferrous-based coating thereon; and

controlling the flow of the oxygen relative to the flow of the gaseous fuel to provide an oversupply of oxygen in excess of the oxygen required for stoichiometric combustion of the gaseous fuel, and reacting the excess oxygen with an associated fraction of the wire feed material in the high temperature zone to combust the associated fraction of the wire feed material as a source of solid fuel to provide a supplemental source of heat to the high temperature zone of the HVOF device; and wherein the ferrous-based coating includes an addition of at least one of: yttrium, calcium, magnesium, titanium, zirconium, hafnium, cerium, and lanthanum; and wherein the gaseous fuel comprises at least one of methane and propane.